THE FY 2002 IMPLEMENTATION PLAN FOR NWS TRAINING AND EDUCATION

I. OVERVIEW

The purpose of this document is to specify training and education activities for all National Weather Service (NWS) staff in fiscal year (FY) 2002. The requirement for the FY 2002 Implementation Plan for NWS Training and Education (IP02) is specified by the NWS National Strategic Training and Education Plan (NSTEP).

As per NSTEP, the process of determining and prioritizing training requirements within available budgets was coordinated by the NSTEP Field Requirements Group (FRG). The FRG representatives for the IP02 process included the Regional Scientific Services Division Chiefs or Regional Scientists, and the National Centers for Environmental Prediction's (NCEP) Executive Officer. This document provides the requirements for the NSTEP Heads of Training Group (HOTG) to develop and/or offer the instructional components indicated herein during FY 2002. The coordination of the entire NSTEP process, including development of this plan, was facilitated by the NSTEP National Headquarters Group (NHG). For detailed information on NSTEP, go to **www.nwstc.noaa.gov/d.ntp/nstepOV.html**.

Members of the NSTEP Team's FRG and other experts participated in conference calls during spring 2001 to specify the highest priority NWS training to be accomplished in FY 2002. Tables 1 and 2 show the final in-residence classes and FY 2002 training expenditures, respectively, as determined by the FRG process, which will be implemented and tracked in FY 2002.

As a guide to the remainder of this document, a summary of definitions and terms used in conjunction with the Professional Development Series (PDS) process is provided in Section II. A detailed summary of training plans for FY 2002 is provided in Section III. These plans include PDS-related residence courses and distance-learning development, in addition to non-PDS programmatic training activities for which funds have been identified.

Table 1 contains a summary of all in-residence classes to be offered in FY 2002. This summary provides details related to class size and length, funding source, slot allocation by Region, and itemized costs (including contract costs for all classes). Each class listed in Table 1 is also included in Table 2, stratified by PDS. It is noted while some activities could easily have been placed into two or more PDSs, each activity is

listed only once and has been placed in the PDS deemed most appropriate by the NSTEP Team.

Table 3 contains an integrated workload analysis of HOTG resources, also stratified by PDS. For some NWS/Cooperative Program for Operational Meteorology, Education, and Training (COMET) employees, funding is provided from non-NWS sources, which explains a total workload of less than 1.00. In addition, two employees at the NWS Training Center (NWSTC) work half-time schedules, and count as one Full-Time Equivalent (FTE). Table 4 depicts the complete set of all PDSs and their development status. Finally, Table 5 contains a list of unfunded priorities as determined by the FRG.

II. PDS Process - Definitions and Terms

NSTEP defines a PDS as "a set of integrated instructional components and presentations which describe the skills, knowledge, and abilities necessary to fulfill a major job responsibility." Each PDS is made up of a series of Professional Competency Units (PCUs) and Instructional Components (ICs), which are defined as follows:

PCU: Taken together, PCUs make up the integrated set of related job skills and abilities required to fulfill a major job responsibility (i.e., PDS). Each PCU specifically defines the skills or abilities individual staff are expected to attain in a given area of job performance. Table 4 shows the number of PCUs for each PDS, along with their development status.

IC: ICs are the specific training modalities used to train the job skills outlined in a specific PCU (e.g., classroom, teletraining, Internet World Wide Web [WWW]). A number of different training modalities may be used to accomplish required training within each PDS and even within each PCU. Additional details on the PDS concept can be found at the "Meteorology Education and Training" (MetEd) home page on the Internet, which can be accessed at: **http://meted.ucar.edu/index3.htm**. Also, as part of the PDS development effort, a new NWS Training Internet home page (NWSTRN) is under development by the NWSTC. NWSTRN will be used as a cross-cutting reference source for all NWS PDS training activities. This page can be accessed at:

http://www.nwstc.noaa.gov/d.ntp/

NWSTRN contains links to all PDSs, along with associated PCUs and ICs. Links to training materials are also provided as appropriate. A facsimile of Table 4 is accessible via the "Master NWS PDS Page" hyperlink on NWSTRN, with hyperlinks provided for each PCU box to access specific PDS definitions and available training.

NWSTRN is being designed so staff in any NWS position can easily identify the suite of basic job skills they are expected to master.

The full listing of PDSs is provided below:

(1) Aviation Weather Prediction
(2) Convective Warning Process
(3) Forecasting Severe Convection
(4) Numerical Weather Prediction
(5) Integrated Sensor Training
(6) Forecaster Development Program
(7) Management, Supervision, and Leadership
(8) Quantitative Precipitation Forecasting
(9) Hydrology
(10) Advanced Weather Interactive Processing System
(11) Engineering, Electronics, and Facilities
(12) Cooperative Observer/Hydrometeorological Technician Duties
(13) Marine Weather Services
(14) Fire Weather
(15) Climate Prediction
(16) Administrative

Listed for each PDS in Table 4 are the associated number of PCUs, along with their developmental status. A green box with an "F" indicates all initial training materials for the PCU have been developed and are available for use. These materials will require periodic updating to ensure consistency with new science and technology. A yellow box with a "U" indicates training development for the PCU is under development but not yet complete. A red box with an "N" denotes training development has not yet commenced for the PCU.

III. TRAINING PLANS FOR FY 2002

In this section, detailed training plans for FY 2002 are presented. Subsection (A) contains a description of labor and non-labor costs associated with the NWS Office of Climate, Water and Weather Services (OCWWS) Training Division. Per the PDS list provided at the end of Section II, subsections (B) through (P) in Section III cover training activities in the respective PDSs.

Other training activities funded are covered in subsection (Q). As stated earlier, all funded items are presented in the order shown on Table 2.

A. FTE Labor, Non-FTE Labor and Non-Labor Costs

The first category appearing in Table 2 is entitled "FTE Labor." Each line item in this category indicates labor costs for only the government FTEs for the three training facilities: NWSTC, the Warning Decision Training Branch (WDTB) and COMET, respectively. A second category of "Non-FTE Labor" represents the labor costs for university staff at COMET and Cooperative Institutes. Finally, salaries for Integrated Sensor Training (IST) Cooperative Institute (CI) Salaries and Numerical Weather Prediction (NWP) Visiting Scientist salaries are included on separate lines in Table 2.

Meanwhile, the "Non-Labor" category encompasses internal costs required at each training facility, including (but not limited to) facility costs, equipment, staff travel and training, and supplies and materials. The COMET grant supports the costs of university instructors and their travel; costs to support the COMET classroom; costs of building and archiving case studies for use in the classroom; costs of fulfilling data requirements for Science and Operations Officers (SOOs); costs for creating COMET distance-learning modules; costs for supporting the SOO program and SOO Training and Warning Coordination Meteorologist (WCM) resource sites; and costs of maintaining the MetEd Internet site. The COMET infrastructure and computing costs will be cost-shared with all other sponsors using COMET.

B. Aviation Forecasting PDSs

COMET will develop a distance-learning aviation course using computer-based learning modules, webcasts, and teletraining on the topic of improving ceilings and visibility forecasts of fog and stratus. COMET began module development in April 2001 and current plans are to offer the course beginning in June 2002, after the content has been developed.

A series of regional aviation workshops will also be held in FY 2002. Each workshop will be organized by the appropriate regional aviation meteorologist and a focal point from NCEP's Aviation Weather Center, as appropriate, and will focus on awareness of customer requirements in regional aviation issues. The PDSs in this area will be revised, updated, and coordinated with the workshop agendas. Participants will include NWS forecasters, and regional representatives from the Federal

Aviation Administration and the private sector. A NWSTC staff member will work with the workshop presenters to place the presentation materials on the NWSTRN web page.

C. Convective PDSs

The Convective series consists of two PDSs:

- Convective Warning Process
- Forecasting Severe Convection

Most of the work in FY 2002 will focus on the Convective Warning Process PDS.

The goal of the Convective PDSs is to elicit a better scientific understanding of the elements involved in the convective warning process which will improve skills in decision making and ultimately lead to better service.

Many instructional components for these PDSs are either currently available or under development via CD-ROM or the Internet. The WDTB will conduct distance-learning training on the following topics:

- Doppler Weather Surveillance Radar (WSR-88D) Open Radar Product Generator (ORPG) Delta Training (will highlight new functionality and differences from the current RPG).
- Advanced Weather Interactive Processing System (AWIPS) Builds 5.1.2 and 5.2 with System for Convection Analysis and Nowcasting (SCAN) 2.0 Delta Training (for radar/convective warning changes brought about by the new build).
- Training on Areal Mean Basin Estimated Rainfall (AMBER) software, dependent upon AWIPS deployment of AMBER software.

Additionally, the WDTB will offer additional Warning Decision Making (WDM) III workshops and new Severe Weather WDM workshops utilizing Displaced Real Time (DRT) scenarios at COMET on severe weather and flash floods WDM.

In addition to distance learning and residence workshops, the WDTB plans to release two to three DRT scenarios to all Weather Forecast Offices (WFOs) for their local use. As a related DRT activity, the WDTB will update DRT software as needed for LINUX and INFORMIX data base changes, to include new programs such as SCAN and Flash Flood Monitoring and Prediction (FFMP), and to

incorporate new AWIPS builds. NEXRAD funds are provided to pay for five employees at the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS) to work with WDTB staff on this effort.

D. Numerical Weather Prediction (NWP) PDS

Providing NWS forecast staff with a working knowledge of NWP models is important because the overall skill of the NWS forecast program beyond the 12-hour forecast projection is driven primarily by the operational models and the skill of the forecasters to correctly interpret and use the models. At the same time, numerical models are constantly undergoing upgrades and enhancements.

Two COMET Project Scientists are assigned to NCEP's Environmental Modeling Center to accomplish development work for the NWP PDS. These positions support NCEP's development and updating of NWP training materials. They also assist the meteorologists and instructional designers at COMET with updating the NWP distance-learning materials for PCUs 1 and 2. Development of PCUs 3 and 4: "Assessing the Model Initialization in the Forecast Process", and "Using Numerical Guidance in the Forecast Process", will commence during FY 2002. Training will be provided via a series of short case studies posted on the WWW, teletraining and/or webcasts on short topics, along with a web-based electronic mail list server for threaded NWP discussions.

E. Integrated Sensor Training (IST) PDS

The IST PDS addresses the need to make available to field users easily accessible, short training modules on the characteristics of new and derived data sets, how to utilize these data sets on AWIPS, and how to best integrate these data sets with other AWIPS data sets in order to improve the warning and forecast process.

Within the IST PDS PCUs, the areas of highest priority for development in FY 2002 are:

- Using Radar Data and Products
- AWIPS Multi-Source Data Displays
- Using AWIPS in the Forecast Process
- Using Satellite Data and Products

Funds are provided to pay salaries/benefits for employees at the Cooperative Institute for Research in the Atmosphere (CIRA) and the Cooperative Institute for Meteorological Satellite Studies (CIMSS). These employees develop distance-learning materials

associated with the IST PDSs, and develop and provide teletraining sessions via VISITView software to NWS staff. The VISIT program is a combined NWS, National Environmental Satellite, Data, and Information Service (NESDIS), and University effort to provide science infusion and training in a low-cost, effective manner directly to forecasters. This software provides animation and enhancement capabilities which closely match AWIPS, such as full-resolution image fading and linked animation, and features live instructor voice via telephone lines. This funding provides for continued support and development of VISITView. All future VISITView sessions will be captured as archived teletraining sessions and are available for use by all weather forecasters. In addition, there will also be VISITView sessions given by the NESDIS/Office of Research Applications on satellite data and tropical meteorology. NESDIS plans to use VISIT and VISITView to provide follow-on Geostationary Operational Environmental Satellite (GOES) and Polar-Orbiting Environmental Satellite (POES) training to ensure users have the latest information on new satellite sensors, resolution and products.

The WDTB will continue to offer an AWIPS-based WSR-88D Distance Learning Operations Course (DLOC) for those NWS meteorologists and hydrologists who have either not taken the original 4-week, in-residence WSR-88D Operations Course or the previous DLOC training offered by the WDTB. This course includes a 1-week workshop at COMET.

The WDTB will also develop and deliver training on Winter Weather WDM, focusing on the job tasks associated with the process of developing and disseminating winter weather products. The objectives of this workshop will come from a new Winter Weather PDS currently under development by the WDTB.

The National Polar-Orbiting Operational Environmental Satellite System (NPOESS) program will provide COMET with funding to continue development of an NPOESS information and training web site.

F. Forecaster Development Program PDSs

The Forecaster Development Program (FDP) provides a training plan for new meteorologist interns (referred to as interns hereafter) to prepare them for a career as a meteorologist. The FDP contains three phases:

- Operational Basics - Ensures interns have the skills needed to perform the duties of an Hydrometeorological Technician (HMT) position.

- Forecast Familiarization - Provides interns with a set of forecast-related training material to be completed while working standard HMT rotation. Allows interns to gain a common base of knowledge on operational topics.
- Professional Development - Encourages continuing education for meteorologists and helps to decide the career path based on the interns' interests.

The latest version of the FDP resides on the NWSTRN web page. As a related activity in FY 2002, NWSTC will update all paper-based modules from the previously held Forecaster Development Course. This activity requires no financial resources. In addition, NWSTC staff will also meet with the U.S. Navy and Air Force Weather staff to see what common training materials can be shared and developed for NWS Interns and HMTs and Department of Defense enlisted forecasters.

G. Management, Supervision, & Leadership PDSs

There are four PDSs defined in this area:

- Office Management and Administration
- Leadership
- Human Resource Management
- Customer/Partner Service Management

In order to fulfill training requirements associated with the above PDS topics, two courses will continue to be offered by the NWSTC. The "Management and Supervision" course for Meteorologists-in-Charge (MICs); Hydrologists-in-Charge (HICs); and NCEP, Regional, and National Headquarters supervisory personnel fulfills the NOAA 80-hour requirement for management and supervision training. The 1-week "Field Operations Management" course for the first-line management team at field offices provides basic management concepts for those persons who act as office manager when the MIC/HIC or NCEP Center Director is out of the office. These first-line staff include SOOs, WCMs, Development and Operations Hydrologists (DOHs), Electronic Systems Analysts (ESAs), Data Acquisition Program Managers (DAPMs), Lead Forecasters, Senior Hydrologic Forecasters, and Senior Hydrometeorological Analysis and Support (HAS) Forecasters.

In addition, the NWS will continue its participation in the Army's "Personnel Management for Executives I" (PME I) course held at NWSTC. Funding will be provided for travel and tuition costs for 70 NWS attendees in FY 2002. The NWS will reimburse the Army $30,000 for the costs of holding an additional PME I

class. The NWS will also send attendees to the follow-up leadership course entitled "Personnel Management for Executives II" (PME II). Not all PME I attendees will be selected for PME II. The NWS will allocate five slots to NOAA's Leadership Candidate Development Program (LCDP) candidates to evaluate the PME I class and the NWS will also reserve 10 slots for FY 2002 Senior Leadership Potential Program (SLPP) participants.

Contract on-site team training and centralized team facilitator training will continue for about 20 new sites. In addition, to provide a more effective and harmonious partnership between the NWS and the private sector, a **Public/Private Sector Relationship Training Plan** has been established for all NWS employees. NWSTC staff will develop this web-based training and incorporate it into existing NWSTC management classes.

H. Quantitative Precipitation Forecasting (QPF) PDS

Continued development of training and techniques to improve QPF is a priority addressed in the NWS Strategic Plan. The goal of the QPF PDS is to address improvement of precipitation estimation and forecasts which will contribute to improved watch and warning accuracy.

The highest priority PCU for development in FY 2002 is "Evaluate NWP and Value-Added Guidance for Precipitation Forecasting" and the following two activities in association with this PDS are funded:

- Continue the "RFC/HPC Hydromet" course at COMET. This course, attended by HAS Forecasters from River Forecast Centers (RFCs) and NCEP's Hydrometeorological Prediction Center (HPC) QPF staff, focuses on changes required to implement the new QPF process. This class was deferred from FY 2001 due to travel cap restrictions.
- Offer in-residence "Heavy Precipitation and Flash Flood" symposia at COMET for SOOs. The symposia will focus on the WFO's responsibility for heavy rainfall and flash flood forecasting. These classes were also deferred from FY 2001 due to travel cap restrictions.

I. Hydrology PDSs

Seven PDSs are identified for the NWS Hydrologic Services Program:

- Managing the Hydrology Program

- Hydrologic Forecasting
- Model Calibration and Hydrologic Procedure Development
- Forecasting Flash-Flood Events
- Assessing Near-Term Hydrologic Guidance and Issuing Public Forecasts
- Extended-Range Hydrologic Forecasting
- Assimilating Hydrometeorological Data

The highest priority activities for FY 2002 were determined from these PDSs. First, a new "Basin Customization/Localization" course will be offered at COMET. This course, to be attended by WFO Service Hydrologists (SHs), hydrologic focal points or Geographic Information System (GIS) focal points, will include an overview to the FFMP approach and the basin delineation process, along with guidance to customize and localize original delineated basin sets. National Severe Storms Laboratory (NSSL) scientists will be the lead instructors and training will be provided on identifying areas where the basin data set would be modified to enhance services, detailing the process necessary to perform and implement these enhancements.

NWSTC will continue to offer a "WFO Hydrology Program Management" course, which provides training to all SHs and hydrologic focal points on basic concepts specific to management of office hydrology programs. In addition, WFO Hydrologic Forecasting System (WHFS)-related classroom training will continue to be provided at NWSTC. This training is designed for the SH, hydrologic focal point, and one other WFO attendee. Funding is allocated for student and instructor travel to the "WHFS Workshop".

Funding will be provided to support travel to workshops provided by subject matter experts in the Office of Hydrologic Development. The topics of these workshops will include:

- Reservoir Operations
- Ensemble Streamflow Prediction/Statistical Water Supply
- RFC-Wide/HAS (focusing on RFC-Wide application)
- Hydrologic Routing
- Channel Hydraulics
- DOH workshop
- Statistical Hydrology
- Basic Operational Forecast System

In addition, we will continue to develop Internet-based modules in coordination with contractors or through the COMET Outreach Program. Topics for development include Operational Modeling of Snow Accumulation, Channel Hydraulics, and Hydrologic Routing.

As in past years, funding is available for WFO, RFC and NCEP staff to take hydrology and hydrometeorology correspondence courses at local universities. This funding is part of the "Regional Training Funds" entry in Table 2.

J. AWIPS PDSs

The training requirements in this area emanate from the three AWIPS PDSs: "Operating AWIPS," "AWIPS System Administration and Maintenance," and "Implementing Local Applications on AWIPS." After examining the exact nature of the training needs through the individual PCUs, the FRG determined some of these needs could continue to be addressed via the following courses at NWSTC:

"AWIPS Operations Support" is a course for SOOs, DOHs, and AWIPS Focal Points designed to ensure all sites have a trained focal point available to provide operational support to AWIPS and ensure its proper use.

The "AWIPS Applications" course objective is to optimize local developers' ability to design and utilize AWIPS local applications, including important software and Local Data Acquisition and Dissemination (LDAD) utilization training.

The "HP-UX Systems Administration" course focuses on AWIPS System Administration. It is attended by SOOs, DOHs, AWIPS focal points, and ESAs.

The "Intermediate UNIX for ETs" provides Electronics Technicians (ETs) with an appropriate level of UNIX training to prepare them for all ensuing systems maintenance courses.

Also, two courses related to the AWIPS Interactive Forecast Preparation System (IFPS) will continue in FY 2002 mainly for Western Region offices. The "IFPS Managers" course for MICs and Regional IFPS Program Managers prepares managers for the important cultural shift associated with IFPS implementation. The "IFPS Focal Point" course for SOOs and IFPS focal points trains these staff on utilizing IFPS and associated digital/probabilistic data bases to produce routine products.

Additionally, a new "IFPS Science Applications" course was proposed for FY 2002. This course was to address the major paradigm shift associated with the transition from graphics and text to digital data and probabilistic forecasting techniques/products. The FRG recognized the need for this training, but due to budget shortfalls and the fact some Regions plan to develop training in this area anyway, it was determined a

residence course funded by centralized training funds was not needed for FY 2002. The Regions are responsible for all IFPS follow-on training for FY 2002 and OCWWS will try to facilitate sharing of Regional training plans. The NWSTC will provide continued support and distance-learning training for any future IFPS software upgrades.

In order to meet training requirements related to attrition, "AWIPS Systems Manager" courses for ESAs will continue to be offered at the NWSTC. This course is intended to provide ESAs (or RFC/NCEP equivalents) with an understanding of AWIPS hardware, communications, software components, and dataflow.

The NWSTC will work with the Office of Science and Technology, and the AWIPS contractors, to develop teletraining sessions for any AWIPS build software release as required.

Finally, funding has been identified to facilitate local provision of contractor-provided Information Technology (IT) systems training related to AWIPS. These funds, described in Section K, will also be used to procure contract training for various local systems administration training needs.

K. Engineering, Electronics, and Facilities PDSs

There are 11 PDSs identified in this area:

- Facilities Maintenance
- Facilities Management
- Environmental Compliance
- WSR-88D Maintenance
- NWR Maintenance
- Upper Air (Profiler) Maintenance
- Data Acquisition / Dissemination Systems Maintenance
- IT Systems and Network Support
- General Engineering Skills
- Safety and Health
- ASOS (PACE) Maintenance

As indicated by these PDSs, critical training needs focus on systems personnel being able to understand, utilize, and properly integrate the many new and derived data sets now available; make the transition of the work force from hands-on to systems support; and take responsibility for ensuring adequate and economical facility maintenance to meet operational requirements.

Much of the training will be accomplished via classes offered by the NWSTC. Training will include the continuation of courses on

new and currently used systems. These courses include "Automated Surface Observing System (ASOS) Maintenance," "Introduction to NWS Systems," "ART Rawinsonde System Maintenance," "WSR-88D Maintenance," "WSR-88D MLOS Maintenance," "WSR-88D Dual Thread Adjunct Maintenance," "WSR-88D Open RPG Maintenance," "CRS Maintenance," "CRS Network Operations," and "Fall Protection and Rescue." Descriptions of the above classes can be accessed via the NWSTC Home Page at:

http://www.nwstc.noaa.gov/d.train/classes.html#START.

Two courses which were previously funded by the Office of Operational Systems will be funded by national training funds in FY 2002. "Environmental Compliance Training" teaches office environmental compliance focal points environmental compliance regulations consistent with the regulations spelled out in the NWS Operations Manual. "Environmental Compliance Refresher Training" is offered for environmental compliance focal points who have already completed the initial environmental compliance training.

A new "Crown Transmitter Maintenance" course will be held at the NWSTC in FY 2002. The course will provide ESAs and ETs details on installation and maintenance for the new NOAA Weather Radio Crown Transmitter system. For this class, NWSTC staff will be trained by contractors first before teaching the course.

In addition, the NWSTC will work with the office of the Chief Information Officer to develop a Network Security distance-learning course in FY 2002 to address network security issues.

Concurrently, funding has been identified for local facilities maintenance and IT systems training to ensure field staff know how to repair vital mechanical and electrical systems; are aware of good maintenance practices; and possess a clear knowledge of how to comply with building, electrical, mechanical, environmental, and safety codes and regulations. These funds will also be used to provide necessary training for the new IT position at WFOs and are included in the "Regional Training Funds" portion of Table 2, which will be transferred to the Regions for implementation.

L. Cooperative Observer/HMT PDSs

Three PDSs are identified in this area:

- Cooperative Program Management
- Surface Observing Program

- Upper Air Program

Training in FY 2002 will focus on the Cooperative Program Management and Surface Observing Program PDSs. A new "Data Acquisition Operations" course will be offered at NWSTC to teach all NWS operational and management staff involved in data acquisition to address identified training deficiencies associated with equipment operation, and to review the latest NWS policies and procedures of the data acquisition process. The NWSTC attrition course entitled "Cooperative Network Operations" provides training for those managing the Cooperative Observing Program. The course includes details on program requirements, purposes, and objectives with topics including observer recruitment, equipment installation and maintenance, and network data quality control.

To address basic meteorology training needs for HMTs, the NWSTC will work with the United States Navy and Air Force to adapt their basic, web-based meteorology training to meet these needs and look for areas of collaboration.

M. Marine Weather Services PDS

To address the training needs identified in the Marine Weather Services PDS, funds have been identified for Regional marine workshops. The Western Region marine workshop and one other Regional marine workshop to be determined will be funded for FY 2002. The Regional marine program manager and an NCEP Marine Prediction Center focal point, as appropriate, will define curricula for these workshops, and engage local academic experts to complete training based on requirements specified by this PDS. NWSTC staff will take electronic presentation materials from the workshops and build a web-based training package on the NWSTRN web page. Funds are also provided for use of University experts to develop marine training materials, and funds for software and PDS planning meetings.

In addition, the OCWWS Marine Services Branch has developed a **marine cross-training plan** detailing possible areas of opportunity which managers can use in their office marine training program. This program can be utilized as opportunities arise.

N. Fire Weather PDSs

The Fire Weather PDS and the Incident Meteorologist (IMET) PDS comprise the Fire Weather PDSs. Materials or courses to address the majority of training requirements for both the Fire Weather

and IMET PDSs are already available, and continue to be amalgamated for access on NWSTRN by the PDS Producers. Funding is continuing for a "Fire Weather Forecasters" course to train fire weather focal points on the latest advances in fire weather forecasting.

O. Climate Prediction PDS

In order to meet critical training requirements defined in the Climate Prediction PDS, a new "Climate Symposium" will be conducted at COMET in FY 2002. This workshop for SOOs and climate focal points will provide background on all NWS climate products, and will address the training requirements of PCU 2: "Demonstrate Understanding of Climate Variability Sufficient to Apply to Local Services". This will provide forecasters with the resources to answer questions from the public on how climate fluctuations affect local weather variability, as well as information on the latest developments in the climate analysis and forecasting. The FRG provided funding for one of these workshops. However, additional outside funding may be obtained by the OCWWS Climate Services Division to fund a second climate workshop in FY 2002.

There will also be VISITView teletraining sessions offered to address the training needs of PCU 3: "Demonstrate Understanding of the Basis and Methodologies of Climate Prediction Center (CPC) Products", and PCU 4: "Interpret and Apply CPC Products". In addition, teletraining sessions will be developed to address policy changes with excessive heat policy criteria. The majority of other climate training will be accomplished via public outreach materials during FY 2002, some of which is already available.

P. Administrative PDS

The majority of training materials for the Administrative PDS are already available and are being amalgamated for access on NWSTRN by the PDS Producers. The FRG will continue to allocate funds for Regions to conduct formal Administrative Support Assistant (ASA) training during FY 2002. This training will include travel/per diem costs to attend residence and correspondence courses, and commercially available training. This funding is included as part of the "Regional Training Funds" line in Table 2.

Q. Other Training Activities

"COMAP" Course - COMET will offer a COMET Mesoscale Analysis and

Prediction (COMAP) course. This course is required for new SOOs and provides graduate-level education in mesoscale meteorology topics. Specifically, COMAP is designed to increase participants' knowledge of mesoscale meteorology and new observing systems, and to enhance their capabilities in forecasting, leading training programs, and participating in research activities.

Teletraining Communications: This supports routine commercial communications and bridging costs for provision of teletraining sessions by the three NWS training facilities and other providers, such as NESDIS, Regional Headquarters offices, and local offices.

Regional Training Funds: These funds are allocated to support the following kinds of activities, and are transferred directly to the Regions and NCEP for distribution to their respective field offices/centers:

- Hydrology correspondence courses: Described in subsection (I).
- Local Facilities / IT funds: Described in subsection (K).
- ASA Training: Described in subsection (P).
- Regional Collaborative Projects: This supports NWS/university collaborative projects, workshops, and associated computer and travel for collaborative research.

Note the respective amounts shown for each of these purposes in Table 2 are simply recommended amounts. Individual Regions and NCEP may allocate these Regional Training Funds as they see fit.

SOO/DOH/WCM Funds: This supports local office training and outreach activities by providing funds to each WFO, RFC, and NCEP Service Center.

Learning Management System Software: This software will establish a comprehensive, structured training mechanism and database for the NWS training program, and will allow employees and their supervisors to access their training history and define their future training needs. Employees will be able to review, request and register for available training of all delivery methods (e.g. classroom, teletraining, web modules, or distance learning). The software will allow training providers to streamline administrative tasks such as posting the availability of training events, tracking progress and completion of students enrolled, administering exams and training evaluation. It will

also be able to track progress and record completed training within an employee's Individual Development Plan.

NSTEP/PDS Coordination Meetings: This supports participant travel to training and NSTEP Team meetings as needed during the year.

Unidata Case Studies: This supports a project with the University Corporation for Atmospheric Research (UCAR)'s Unidata corporation to work with NWS and COMET and place 12 new hydrometeorological case studies used in the COMET classroom on their web server for access by the NWS and university communities. These case studies will be produced in AWIPS format and will be used for local AWIPS playback capabilities.

COMET NWS Subject Matter Expert (SME) Travel: This supports SME travel in association with COMET classes and distance-learning module development.

American Meteorological Society (AMS) Journals: This supports purchasing the AMS journals "Monthly Weather Review," "Weather and Forecasting," and "Journal of Hydrometeorology" for all field offices via Internet access only, and Regions and NCEP Service Centers via hard copy and Internet access.

Hurricane Liaison Training - This funds travel to the Tropical Prediction Center (TPC) for selected WCMs to work with the multi-agency Hurricane Liaison team which briefs the Federal Emergency Management Agency (FEMA) and representatives of all Federal agencies responsible for response and recovery.

Arctic Meteorology / Winter Weather Workshop: This funds an annual workshop to be held alternately in Canada and Alaska. The workshop includes topics which deal with the science of preparing forecasts and warnings in the northern latitudes. A PDS will be developed in this area, and Canada has agreed to provide resources to COMET for continued development.

IV. PRIORITIZED UNFUNDED TRAINING REQUIREMENTS FOR FY 2002

Table 5 is a prioritized listing of the top $1,000,000 of unfunded training requirements for FY 2002. OCWWS applied a weighted averaging system to reach a consensus of the Regions/NCEP priorities. While these are the priorities believed to be most important at the time this Plan was assembled, we will reassess these priorities if and when additional funding becomes available.

TABLE 1 - Residence Training Requirements: FY 2002 (6/21/01)

	Stud. Class	Days	Source	ER	SR	CR	WR	AR	PR	NP	Other	Extra Slots	Total Slots	Hotel Cost/ Class	Trav. Cost/ Class	Sup. Cost/ Class	Cont. Cost/ Class	Total Cost/ Class	Class No.	Class Total Cost
NWSTC																				
ASOS Maint.	8	13	ASOS	6	6	5	8	2	1	0	2	2	32	$10,080	$10,648	$1,015	$0	$21,743	4	$87.0
Intro to NWS Systems	5	3	AWIPS	2	1	2	2	2	0	1	0	0	10	$1,400	$3,505	$242	$0	$5,147	2	$10.3
ART Rawinsonde Sys. Maint.	6	13	Base	11	2	4	6	3	2	0	2	0	30	$7,560	$7,446	$694	$0	$15,700	5	$78.5
Fall Protection & Rescue	16	3	Base	35	10	63	18	6	1	0	3	8	144	$4,480	$11,216	$775	$13,850	$30,321	9	$272.9
88D Maint.	8	27	NEX	4	2	2	4	0	0	0	4	0	16	$21,840	$18,208	$1,956	$0	$42,004	2	$84.0
88D MLOS Maint.	8	3	NEX	2	0	0	3	0	0	0	2	1	8	$2,240	$5,608	$388	$12,500	$20,736	1	$20.7
88D Dual-Thread Adj. Maint.	8	3	NEX	1	0	0	3	0	0	0	2	2	8	$2,240	$5,608	$388	$0	$8,236	1	$8.2
88D Open RPG Maint.	10	6	NEXPAC	39	50	65	40	0	0	0	22	4	220	$6,300	$9,260	$765	$0	$16,325	22	$359.1
CRS Maint.	8	6	Base	12	12	22	13	3	2	0	0	0	64	$5,040	$7,408	$612	$320	$13,380	8	$107.0
AWIPS Systems Manager	16	12	AWIPS	6	4	6	4	2	2	4	2	2	32	$19,040	$20,576	$1,940	$0	$41,556	2	$83.1
AWIPS Ops. Support	16	8	AWIPS	10	8	16	8	2	1	2	1	0	48	$12,320	$16,256	$1,402	$700	$30,678	3	$92.0
AWIPS Applications	16	3.5	AWIPS	13	19	16	10	3	1	2	0	0	64	$4,480	$11,216	$775	$1,200	$17,671	4	$70.7
HP-UX Systems Admin.	12	8	AWIPS	2	2	3	2	1	1	1	0	0	12	$9,240	$12,192	$1,052	$0	$22,484	1	$22.5
Intermediate UNIX for ETs	12	8	AWIPS	8	5	11	8	1	1	0	2	0	36	$9,240	$12,192	$1,052	$0	$22,484	3	$67.5
IFPS Managers	16	2	AWIPS	0	0	0	22	0	0	2	8	0	32	$3,360	$10,496	$686	$800	$15,342	2	$30.7
IFPS Focal Point	16	8.5	AWIPS	0	0	0	42	0	0	0	6	0	48	$12,320	$16,256	$1,402	$600	$30,578	3	$91.7
PME I	14	8	Base	13	16	5	14	5	3	4	10	0	70	$13,860	$14,224	$1,227	$6,000	$35,311	5	$176.6
PME II	15	4	Base	3	3	5	3	1	0	0	0	0	15	$6,750	$11,190	$811	$4,250	$23,001	1	$23.0
Management & Supervision	20	9.5	Base	8	5	8	6	4	3	4	2	0	40	$16,800	$21,220	$1,865	$3,700	$43,585	2	$87.2
Field Operations Management	24	4	Base	14	14	15	16	1	5	4	0	0	72	$8,400	$17,904	$1,297	$6,700	$34,301	3	$102.9
Coop Network Ops.	16	8	Base	11	5	14	8	5	2	0	3	0	48	$12,320	$16,256	$1,402	$2,400	$32,378	3	$97.1
CRS Network Ops.	8	3	Base	14	18	18	10	3	1	0	0	0	64	$2,240	$5,608	$388	$0	$8,236	8	$65.9
WFO Hydro. Pgm. Management	16	8	Base	14	19	13	15	2	1	0	1	0	64	$12,320	$16,256	$1,402	$6,500	$36,478	4	$145.9
WHFS Workshop	8	3.5	AWIPS	3	5	1	1	2	1	0	0	3	16	$2,240	$5,608	$388	$0	$8,236	2	$16.5
Env. Compliance Training	40	3	Base	12	10	3	8	2	1	2	2	0	40	$11,200	$28,040	$1,938	$16,000	$57,178	1	$57.2
Env. Compliance Refresher	40	2	Base	10	10	9	8	1	1	0	1	0	40	$8,400	$26,240	$1,714	$12,000	$48,354	1	$48.4
Data Acquisition Ops. (new)	16	4	Base	12	16	16	12	4	4	0	0	0	64	$5,600	$11,936	$865	$0	$18,401	4	$73.6
Crown Transmitter Maint. (new)	5	3	Base	5	1	8	6	1	1	0	1	2	25	$1,400	$3,505	$242	$0	$5,147	5	$25.7
COMET																				
COMAP	18	35	Base	4	3	4	4	1	1	1	0	0	18	$0	$142,992	$0	$112,000	$254,992	1	$255.0
RFC/HPC Hydromet	18	6	Base	3	6	2	3	2	0	2	0	0	18	$0	$42,100	$0	$16,800	$58,900	1	$58.9
COMAP FF Symp.	27	4.5	Base	10	12	14	10	2	2	2	2	0	54	$0	$35,100	$0	$10,400	$45,500	2	$91.0
Climate Symposium (new)	27	4.5	Base	5	6	7	5	1	1	1	1	0	27	$0	$35,100	$0	$7,200	$42,300	1	$42.3
Basin Cust./Localization (new)	18	3	AWIPS	20	27	31	21	3	2	0	1	3	108	$0	$23,400	$0	$7,200	$30,600	6	$183.6
WDTB																				
DLOC Wkshp.	27	3.5	NEX	5	20	15	20	3	2	3	2	11	81	$0	$35,100	$2,500	$0	$37,693	3	$113.1
Svr. Wx. WDM Wkshp. (AWIPS)	27	3.5	AWIPS	10	12	14	10	2	2	2	2	0	54	$0	$35,100	$2,500	$3,200	$40,893	2	$81.8
Svr. Wx. WDM Wkshp. (NEX)	27	3.5	NEX	5	6	7	5	1	1	1	1	0	27	$0	$35,100	$2,500	$3,200	$40,893	1	$40.9
WDM III	27	3.5	NEX	10	9	12	13	2	1	2	2	3	54	$0	$35,100	$2,500	$3,200	$40,893	2	$81.8
Winter Wx. WDM Wkshp.	27	3.5	AWIPS	5	6	7	5	1	1	1	1	0	27	$0	$35,100	$2,500	$4,800	$42,493	1	$42.5

Summary	Funding
NWSTC - OCWWS Base	$1,254.9
COMET - OCWWS Base	$447.2
WDTB - OCWWS Base	$0.0
TOTAL OCWWS Base	**$1,702.1**
TOTAL AWIPS	**$792.9**
NWSTC NEXRAD	$579.0
WDTB NEXRAD	$235.8
TOTAL NEXRAD	**$814.8**
TOTAL ASOS	**$87.0**
TOTAL RESIDENCE COSTS	**$3,396.8**

Cost/Student		
Days	NWSTC	COMET/WDTB
2	$900	
3 or 3.5	$1,000	
4	$1,100	$1,300
6	$1,400	$1,600
8 or 8.5	$1,800	$2,000
11	$2,300	
12	$2,400	
13	$2,500	
14	$2,700	
25	$5,000	
27	$5,300	

Note: Boulder per diem 132/day; KC actual 112/day (70/hotel, 42/M&IE)

TABLE 2 - FY 2002 NWS Training and Education Expenditures (6/21/01)

Note: Dollar Amounts in K

	Base	NEXRAD	AWIPS	ASOS	Total
FTE Labor					
NWSTC (30 FTEs)	2238.4	174.3			2412.7
WDTB FTEs		839.3			839.3
OCWWS FTEs at COMET	313.8				313.8
NWSH	369.1	47.5			416.6
Non-FTE Labor					
WDTB-CIMSS (non-FTE)		448.4			448.4
COMET/UCAR Staff-Grant (non-FTE)	895.9		804.1		1700
Non-Labor/PCS Costs/Other					
NWSTC	350	162		30	542
WDTB		215.8			215.8
COMET Van	22				22
Aviation					
Regional Aviation Workshops	180				180
Convective					
DLOC Workshop		113.1			113.1
Severe Weather WDM Workshop (AWIPS funded)			81.8		81.8
Severe Weather WDM Workshop (NEXRAD funded)		40.9			40.9
WDM III (NEXRAD funded)		81.8			81.8
Winter Winter WDM Workshop (new)			42.5		42.5
NWP - NWP Visiting Scientist	240				240
IST - IST CI Salaries	425				425
Management, Supervision & Leadership					
Leadership Course (PMEI)	176.6				176.6
Advanced Leadership Course (PMEII)	23				23
Management and Supervision	87.2				87.2
Field Operations Management	102.9				102.9
On-site Team Training	100				100
Hydrology / QPF					
RFC/HPC Hydromet	58.9				58.9
WFO Hydrology Program Management	145.9				145.9
WHFS Workshop			16.5		16.5
Hydrology Workshops	100				100
New Hydro WWW Modules	42				42
	91				91
Basin Customization/Localization Training (new)			183.6		183.6
AWIPS					
AWIPS Systems Manager			83.1		83.1
AWIPS Operations Support			92		92
AWIPS Applications			70.7		70.7
HP-UX Systems Administration			22.5		22.5
Intermediate UNIX for ETs			67.5		67.5
IFPS Managers			30.7		30.7
IFPS Focal Point			91.7		91.7
Engineering, Electronics, and Facilities					
ASOS Maintenance				87	87
Intro to NWS Systems			10.3		10.3
ART Rawinsonde System Maintenance	78.5				78.5
Fall Protection and Rescue	272.9				272.9
WSR-88D Maintenance		84			84
WSR-88D MLOS Maintenance		20.7			20.7
WSR-88D Dual-Thread Adjunct Maintenance		8.2			8.2
WSR-88D Open RPG Maintenance		359.1			359.1
CRS Maintenance	107				107
CRS Network Operations	65.9				65.9
Environmental Compliance Training	57.2				57.2
Environmental Compliance Refresher Training	48.4				48.4
Crown Transmitter Maintenance (new)	25.7				25.7
Coop Observer/HMT Duties					
Coop Network Ops. Course	97.1				97.1
Data Acquisition Operations (new)	73.6				73.6
Marine Weather Services					
Regional Marine Workshops	50				50
Marine PDS Support	50				50
Fire Weather					
Fire Weather Forecasters Course	60				60
Climate					
Climate Symposium (new)	42.3				42.3
Other Program Funds					
COMAP	255				255
Teletraining Comms	75				75
Regional Training Funds - Includes: ASA Training, Hydro Corr. Courses, Local Facilities / IT Training Funds Regional Collab. Projects	734				734
SOO/DOH/WCM funds	252				252
Learning Management System Software	150				150
NSTEP/PDS Coordination Meetings	50				50
Unidata Case Studies	115				115
COMET NWS SME Travel	50				50
AMS Journals	95				95
Hurricane Liaison Training	10				10
Arctic Met./Winter Wx. Workshop	15				15
TOTAL BUDGET (FTE Labor Excluded)	**5870**	**1534**	**1597**	**117**	**9118**
GRAND TOTAL (including FTE Labor)	**8791.3**	**2595.1**	**1597**	**117**	**13100.4**

TABLE 3A: FY 2002 COMET STAFF PDS MATRIX

STAFF:	Aviation PDS	Integrated Sensor Training	NWP	Hydrology	Climate	Outreach	COMAP	Case Studies	SOO & WCM TRCs	SOO/SAC	WDTB Support			Total
NWS COMET Production Staff														
NWS Lead	0.05		0.05	0.11	0.08	0.10	0.47				0.14			1.00
Instructional Designers	0.75					0.25								1.00
COMET Meteorologists	0.30			0.20			0.50	0.75						1.75
NWS Meteorologists	0.70	1.00	0.10		0.20			0.50	0.50	1.00				4.00
Graphic Artists	0.50		0.20	0.10	0.05		0.10		0.05					1.00
Web Development	0.60		0.10	0.10	0.10		0.10							1.00
Quality Assurance	0.40		0.20	0.10	0.10		0.20							1.00
Admin. Assistants	0.20		0.15	0.25	0.25	0.30	0.45		0.25		0.15			2.00
Students	0.50							0.50		0.50				1.50
Total	4.00	1.00	0.80	0.86	0.78	0.65	1.82	1.75	0.80	1.50	0.29			14.25
NWS Special Projects Staff														
COMET Meteorologists			2.00											2.00
Total			2.00											2.00
Computer Support & Development Group														
System Administrators	0.10	0.10	0.10	0.10	0.10	0.10	0.14	0.10	0.10	0.10	0.10			1.14
Software Engineers	0.40		0.25	0.25	0.25		0.35	0.20	0.10		0.20			2.00
Streaming Media Dev.	0.23			0.11	0.06		0.17							0.57
Students	0.09		0.08	0.08	0.08		0.09	0.08						0.50
Total	0.82	0.10	0.43	0.54	0.49	0.10	0.75	0.38	0.20	0.10	0.30			4.21
COMET Management														
Director	0.05	0.03	0.05	0.05	0.05	0.05	0.05		0.04					0.37
Assistant Director	0.05	0.03	0.05	0.05	0.05	0.05	0.05		0.04					0.37
Administrator	0.05	0.03	0.05	0.05	0.05	0.05	0.05		0.04					0.37
Total	0.15	0.09	0.15	0.15	0.15	0.15	0.15	0.00	0.12	0.00	0.00			1.11

TABLE 3B: FY 2002 WDTB STAFF PDS MATRIX

STAFF:	Administration	Integrated Sensor Training	Convective Warning Process	QPF	Winter Weather	Non PDS								Total
Mahoney	0.70				0.20	0.10								1.00
Admin. Asst. - Vacant	0.90					0.10								1.00
Baalke		0.75		0.10		0.15								1.00
Boettcher		0.70		0.10		0.20								1.00
Ferree		0.50	0.35			0.15								1.00
Grant		0.65	0.05		0.20	0.10								1.00
LaDue		0.55	0.05		0.20	0.20								1.00
Quoetone		0.45	0.40			0.15								1.00
Rinderknecht		0.70	0.05	0.05	0.05	0.15								1.00
Total	1.60	4.30	0.90	0.25	0.65	1.30								9.00
CIMMS Employees:														
Hoggard	0.70	0.10				0.20								1.00
Magsig	0.10	0.25	0.35			0.30								1.00
Tan	0.30	0.15	0.10			0.45								1.00
Wood		0.45	0.05	0.05	0.20	0.25								1.00
Yu		0.55	0.10	0.05	0.20	0.10								1.00
New RA - Vacant		0.40	0.10			0.50								1.00
Total	1.10	1.90	0.70	0.10	0.40	1.80								6.00

TABLE 3C: FY 2002 NWSTC STAFF PDS MATRIX

STAFF:	Administration	Integrated Sensor Training	NWP	Hydrology	Engineering, Electronics, and Facilities	Leadership, Management & Team Training	Aviation Forecasting	AWIPS	Forecaster Development Program	Cooperative PDS	Marine	Facilities	Miscellaneous PDS	Total
Beckman		0.40						0.60						1.00
Bode	1.00													1.00
Byerly					0.90							0.10		1.00
Byrnes							0.20	0.60	0.20					1.00
Clark				0.10		0.80				0.10				1.00
Estes						0.80						0.20		1.00
Griffin					0.30			0.30	0.40					1.00
Hamilton					0.10	0.10		0.60	0.20					1.00
Harding					0.20			0.60				0.20		1.00
Haskins					1.00									1.00
Hatch					0.20			0.80						1.00
Kaplafka				0.10	0.50	0.10				0.10			0.20	1.00
Lewis,D	1.00													1.00
Lewis, J					1.00									1.00
McGough				0.70									0.30	1.00
Vice McNulty						1.00								1.00
Vice Miller					0.40							0.60		1.00
Vice Nedved	1.00													1.00
Polston					0.30			0.30	0.20		0.20			1.00
Quillen					0.60							0.40		1.00
Reed	0.50													0.50
Retzlaff					1.00									1.00
Richards					1.00									1.00
Rowell	0.30				0.60								0.10	1.00
Ryman	0.10				0.70							0.10	0.10	1.00
Schupbach								0.80				0.20		1.00
Teer					1.00									1.00
Vandeloo	0.50													0.50
Vogel	0.80					0.10				0.10				1.00
Wilbur					0.90								0.10	1.00
Wyatt				0.20						0.80				1.00
Total	5.20	0.40	0.00	1.10	10.70	2.90	0.20	4.60	1.00	1.10	0.20	1.80	0.80	30.00

Table 4: NWS PDS Status

Professional Development Series (PDS)	Professional Competency Units (PCUs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Aviation PDSs (Graf)												
* Forecasting Aviation Icing	N	N	N	N	U	U	N	N	N			
* Forecasting Turbulence	N	N	N	N								
* Impact on Aviation Weather on Customers	N	N	N	N								
* CWSU On-Station Systems / Operations	N	N	N	N	N	N						
* Issuing Effective CWSU Products	N	N	N	N								
* Forecasting Low-Altitude Clouds and Fog for Aviation Operations	U	N	U	U								
Convective PDSs (Ferree)												
* Forecasting Severe Convection	F	U	N	F	U							
* Convective Warning Process	N	F	F	U	F	U						
Numerical Weather Prediction (Edman/Staudenmaier)	F	U	U	U								
Integrated Sensor Training (Mostek)	U	U	N	N	F	U	U	U	U			
Forecaster Development Program (FDP) PDSs (Griffin)												
* FDP Phase 1 - Operational Basics	F	F	F	F								
* FDP Phase 2 - Forecast Familiarization	F	F										
* FDP Phase 3 - Professional Development	F	U	F	F								
Management / Leadership / Supervision PDSs (Clark)												
* Office Management and Administration	N	N	N	N								
* Leadership	F											
* Human Resource Management	N	N	N									
* Customer / Partner Service Management	N	N										
Hydrology PDSs (Zimmerman/Helble)												
Quantitative Precipitation Forecasts (Graziano)	U	U	U	U	U	U						
* Managing the Hydrology Program	F	F	U	F	F	F	F	F	F	F		
* Hydrologic Forecasting	U	U	U	U	U	U	N	U	U	U	N	U
* Forecasting Flash Flood Events	N	N	N	N	N	N						
* Model Calibration/Hydrologic Procedure Development	U	U	N	U	U	U	U	U	U	U	N	
* Assessing Near-Term Hydrologic Guidance & Issuing Public Forecasts	U	U	U	U	U							
* Extended-Range Hydrologic Forecasting	U	U	N	U	U	U	U					
* Assimilating Hydrometeorological Data	U	U	U	N	U							

F = Finished
U = Under Development
N = Not Started

Table 4 continued: NWS PDS Status

Professional Development Series (PDS)	Professional Competency Units (PCUs)											
	1	2	3	4	5	6	7	8	9	10	11	12
AWIPS PDSs (NWSTC)												
* Implementing Local Applications on AWIPS	F	F	F	F	F							
* AWIPS System Administration and Maintenance	F	F	F	F	F	F	F	F	F	F	F	F
* Operating AWIPS	N	U	U	U	N	U	U					
Engineering PDSs												
* Facilities Maintenance (Duxbury / Grahl)	U	U	U	U								
* Facilities Management (Beeman)	U	U	U	U	U							
* Environmental Compliance (M. Jacob)	F	F	F									
* WSR-88D Maintenance (Richards / Ballard / Wissman)	U	U	U	U	U	U	N	N	N	N	N	N
* NWR Maintenance (Haskins)	F	F	F	F	F	F	F	F	F	F	F	F
* Upper Air (Profiler) Maintenance (Zichy)	F	F	F	U	U	U	U	U	U			
* Data Acquisition / Dissemination Sys. Maint. (Ryman)	U	U	U	U	U	U	U	U				
* IT Systems and Network Support (Murray / Walker)	U	U	U	U	U	U	N	N	N	N	N	
* General Engineering Skills (All EPMs)	F	F	F	F	F							
* Safety and Health (M. Jacob)	U	U	U	U								
* ASOS (PACE) Maintenance (Retzuff / Haskins)	N	N	N	N	N	N	N	N				
DAPM / HMT PDSs												
* Coop Program Management (Horvitz)	F	F	F	F	F	F	F					
* Surface Observing Program (Ross)	U	U	U	U	U	U	U					
* Upper Air Program (Bower)	U	U	U	U	U							
Marine Weather Services (Ainsworth/Polston)	U	U	U	U	U	U	U	U	U	U	U	U
Fire Weather PDSs (Stokols)												
* Fire Weather	F	F	U	U								
* Incident Meteorologist (IMET)	F											
Climate Services (Livezey)	U	N	U	U	U							
Administrative (ASA) (Dickenson)	U	U	U	U	U	U	U	U				

F = Finished
U = Under Development
N = Not Started

Table 5: Prioritized FY 2002 Unfunded List

Item	Item Amount	Cumulative Amount
Regional Marine Workshops	40.0K	40.0K
1 Winter Weather Workshop	42.5K	82.5K
Marine PDS Support	30.0K	112.5K
4 Fall Protection and Rescue classes	121.2K	233.7K
1 WFO Hydro. Program Management class	36.5K	270.2K
2 Management and Supervision classes	87.2K	357.4K
7 IFPS Science Applications classes	259.7K	617.1K
1 RFC/HPC Hydromet class	58.9K	676.0K
3 AWIPS Applications classes	53.1K	729.1K
4 Data Acquisition Operations classes	73.6K	802.7K
3 Field Operations Management classes	102.9K	905.6K
1 Basin Cust./Local. Workshop	30.6K	936.2K
2 Climate Symposia	84.6K	1020.8K